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(54) Adjustable safety gate

(57) A safety gate has a frame which is adjustable in width and has screw clamps 5, the frame supporting a gate 8, 9 which is also adjustable in width. As shown both frame and gate are formed of two parts mutually slidable to provide the adjustment.

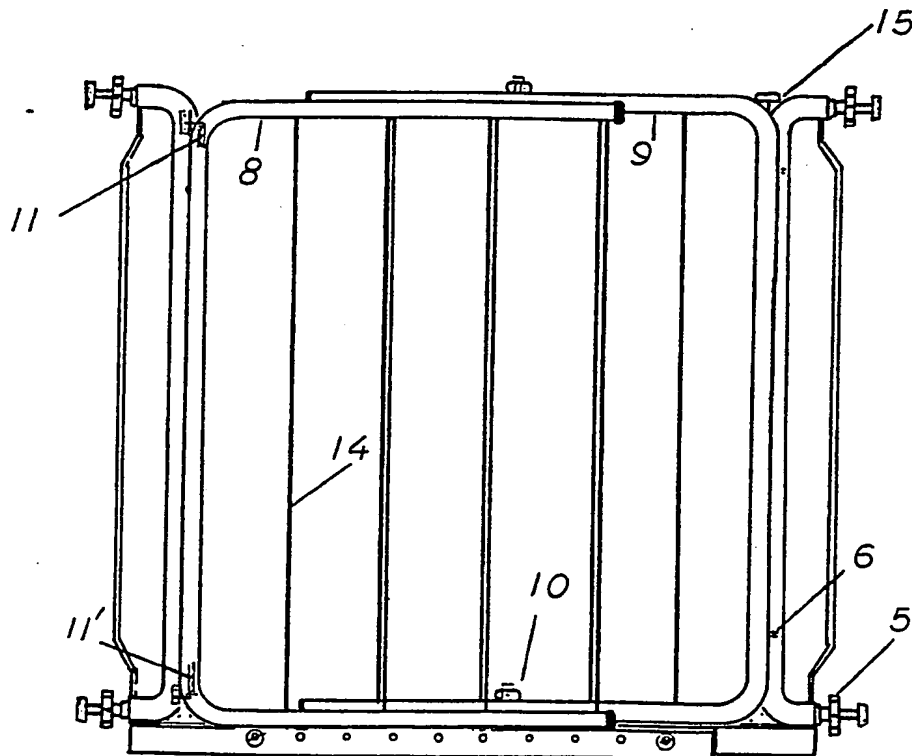


FIG. 3

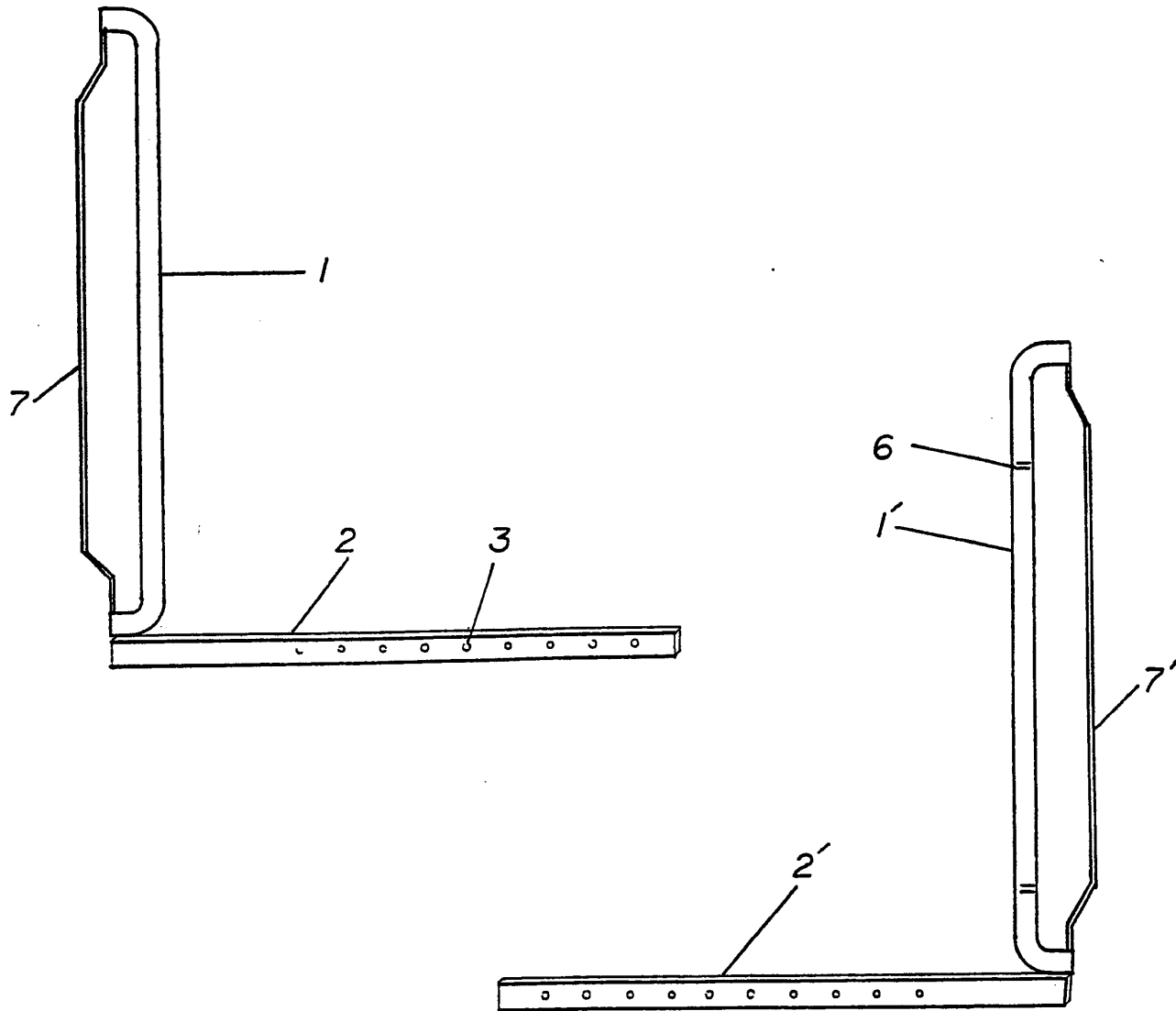


FIG. 1

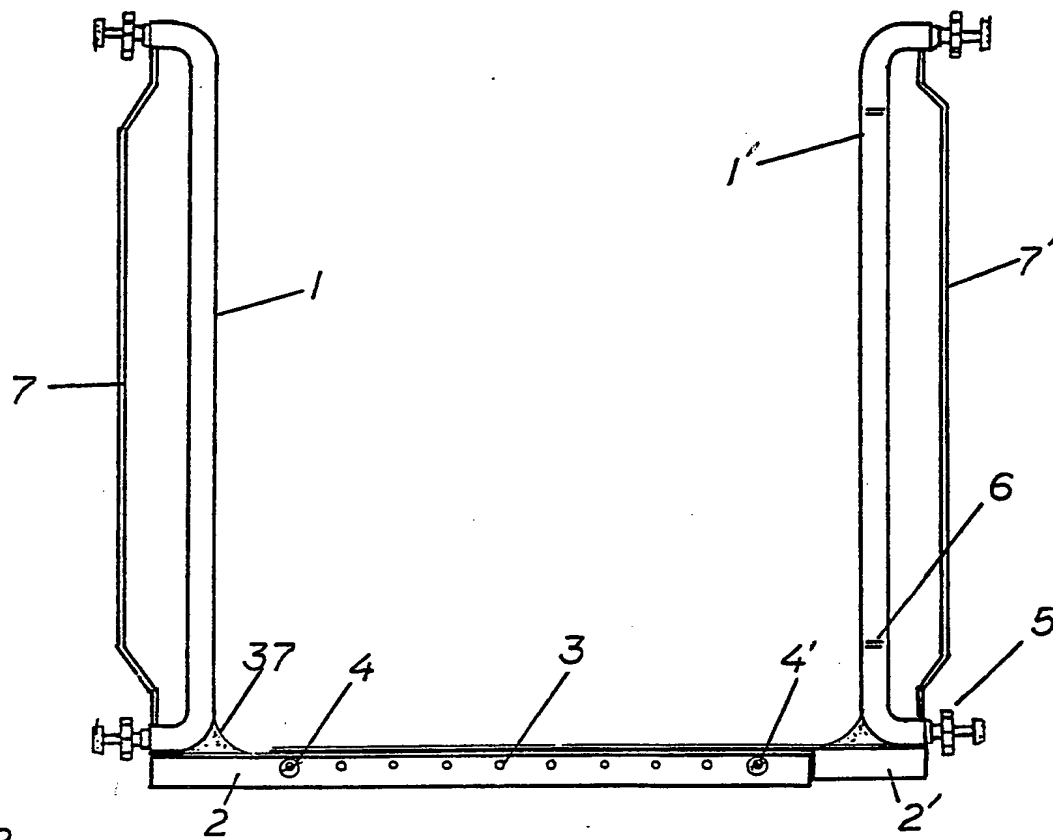


FIG. 2

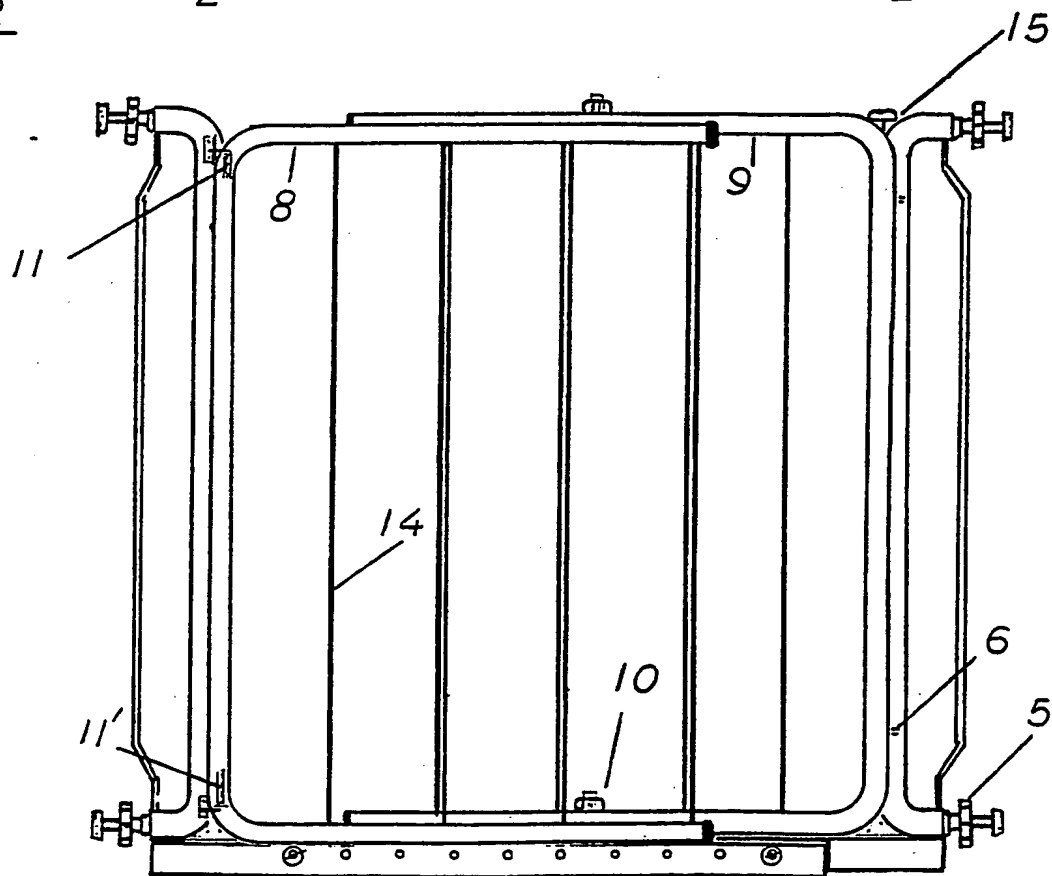


FIG. 3

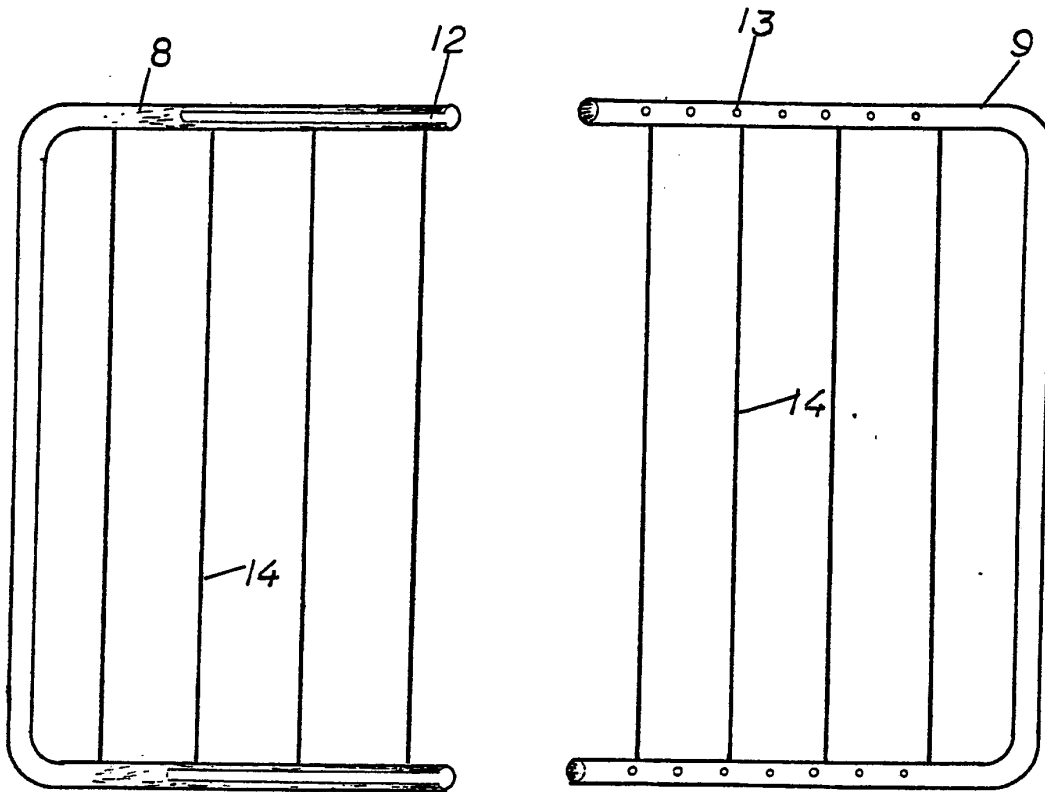


FIG. 4

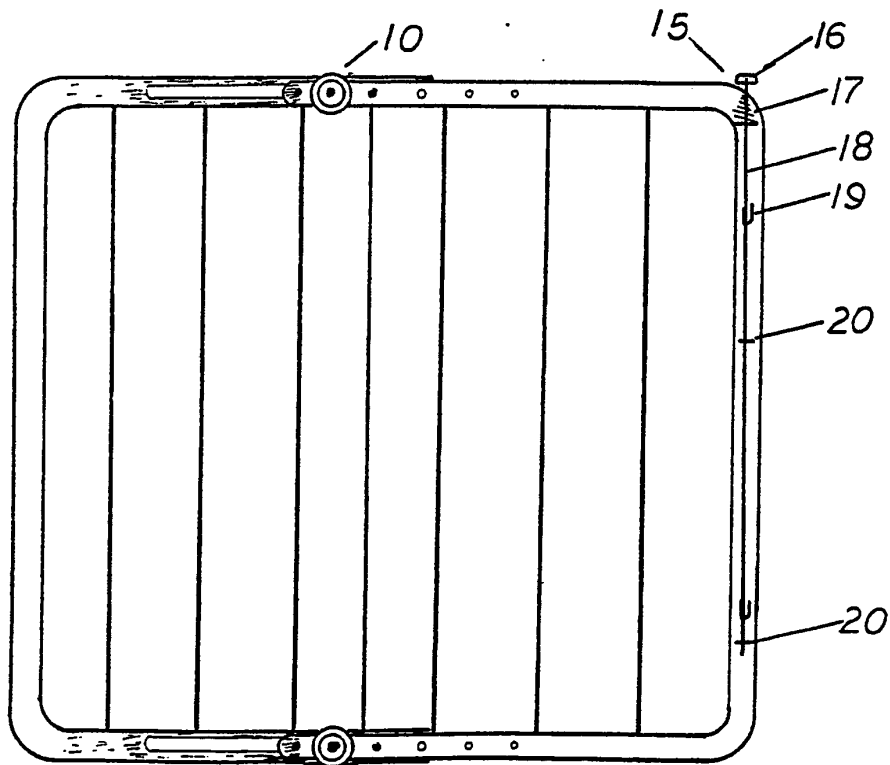


FIG. 5

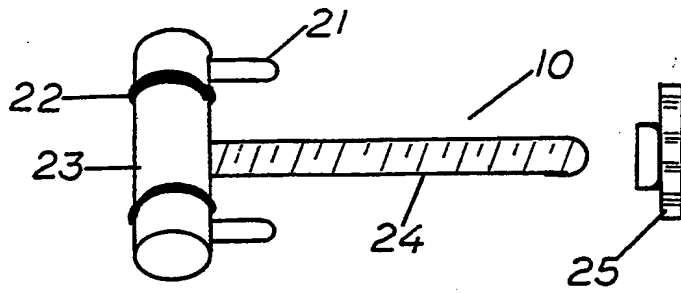


FIG. 6

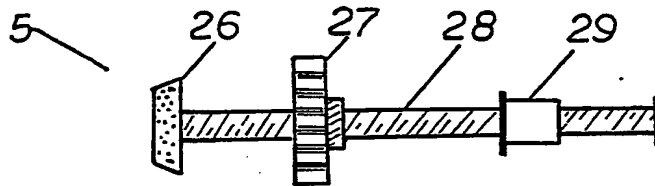


FIG. 7

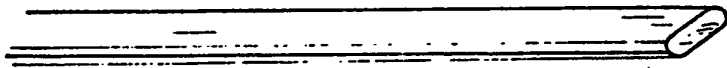


FIG. 8

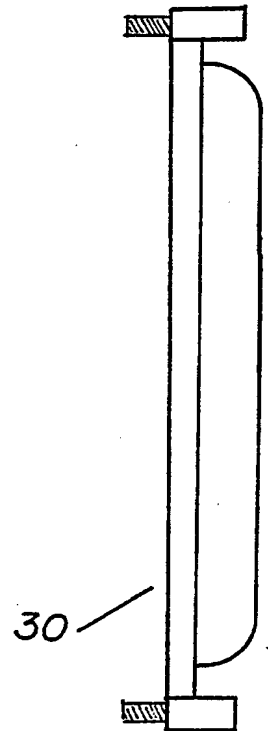


FIG. 9

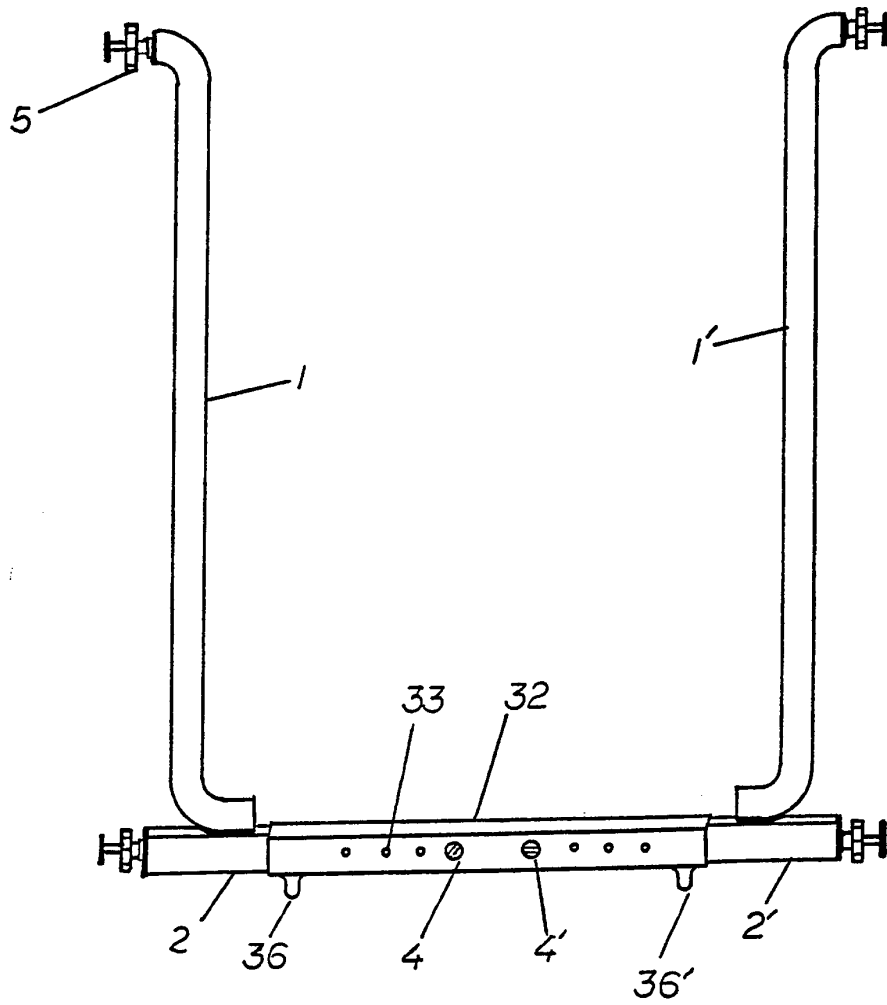


FIG. 10

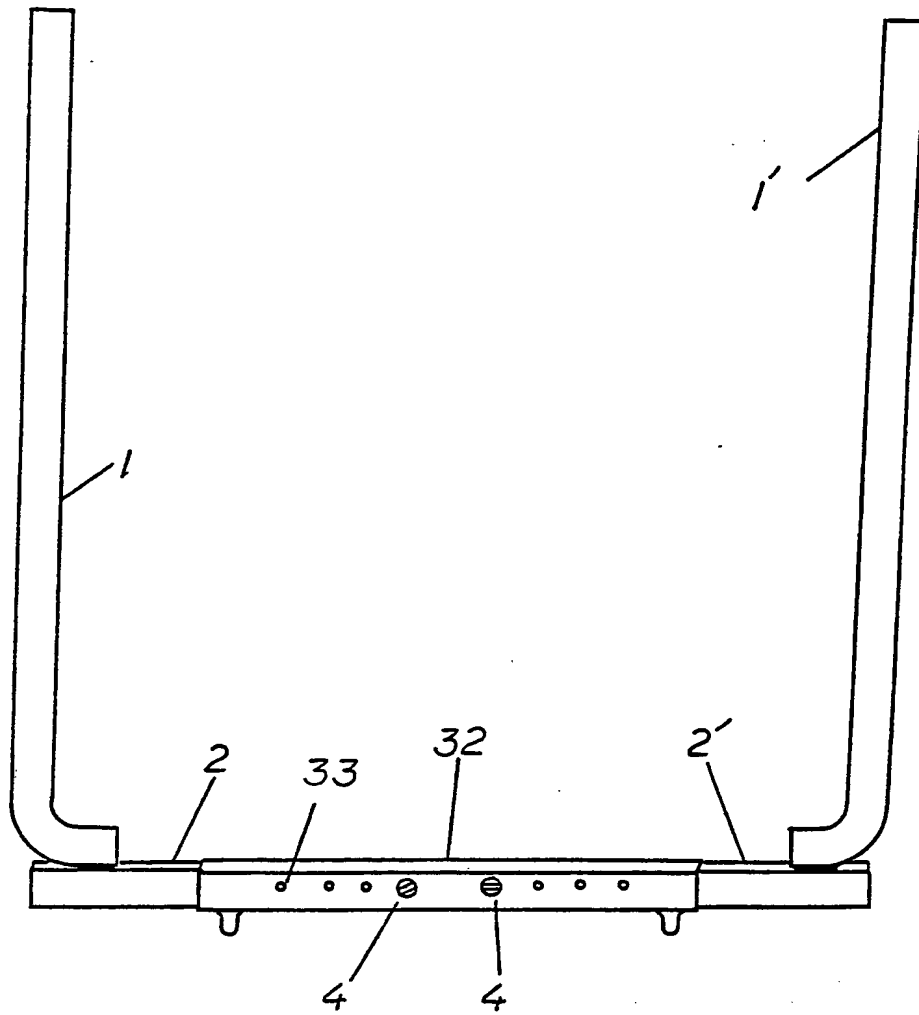


FIG. 11

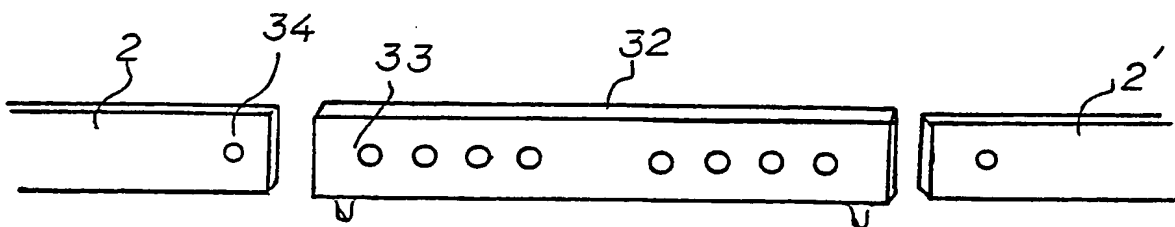
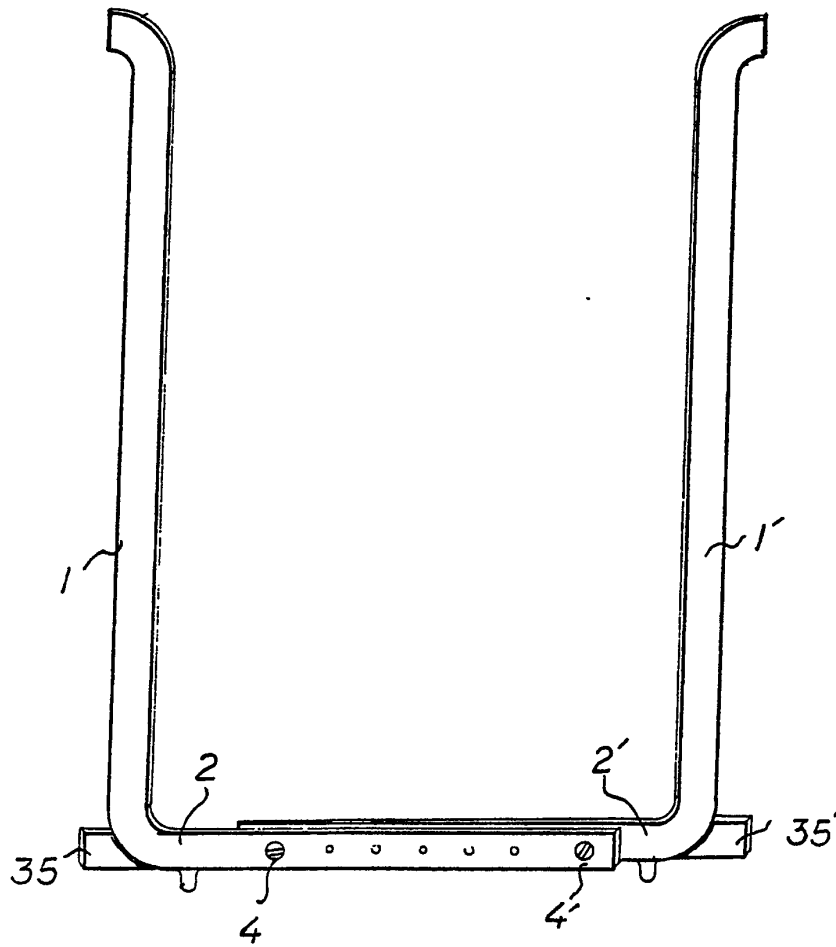
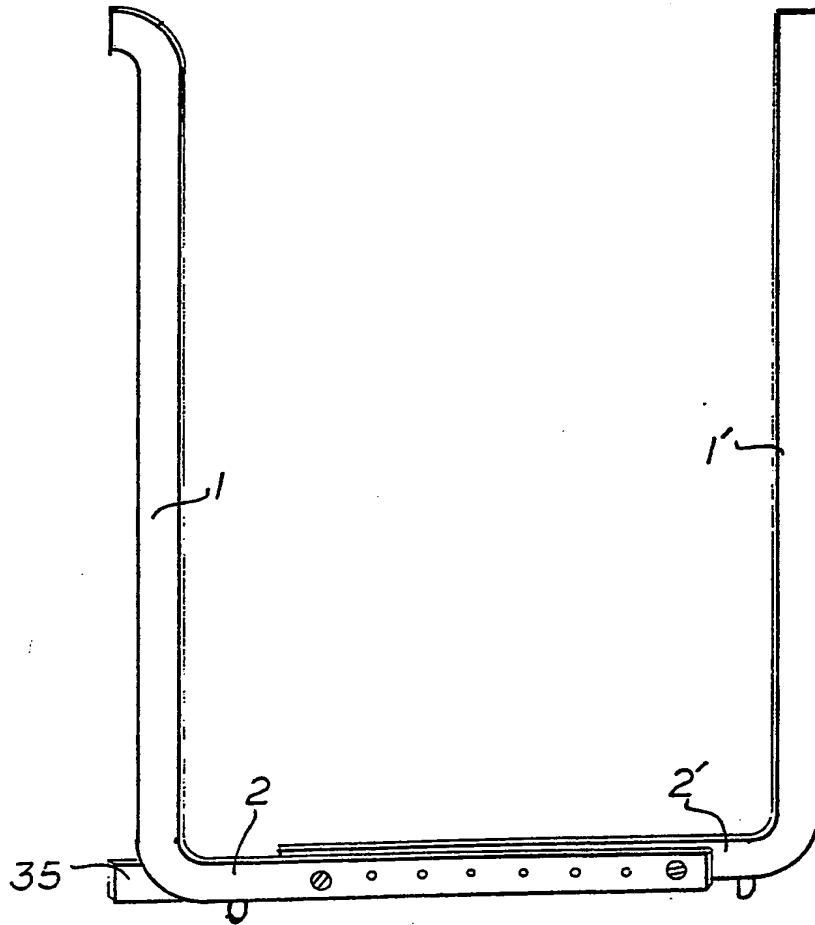


FIG. 12

FIG. 13

FIG.14

BARRIER

The present invention relates to a safety barrier for positioning in doorways, stairways and similar thresholds to limit the movement of small children and pets.

BACKGROUND OF THE INVENTION:

Safety barriers having an openable gate mounted in the centre of the frame are described in the US Patent 4 685 247 and GB 2 193 992. These barriers have rigid outer frames having adjustable securing means. The securing means contribute to barrier's lateral extension. One disadvantage of such a barrier lateral extension mechanism is it's limited expendability, unless an additional extension member is mounted on the main barrier frame. The present invention is an improvement on the earlier designs. The present invention relates to a safety barrier which has an openable gate mounted in the center of a laterally extendable frame assembly.

SUMMARY OF THE INVENTION:

According to the present invention there is provided a laterally extendable safety barrier for positioning between opposing supports of doorways and similar thresholds, said safety barrier having a frame assembly comprising a first lower frame element and a second lower frame element arranged in a laterally extending manner. Said lower frame elements are provided with vertical side support elements, said side support elements may be parallel or antiparallel to each other.

The side support elements have upper and lower ends, the upper and the lower ends may extend laterally but are coplaner with the barrier frame, in

which case the lateral extension may form housing for adjustable barrier securing means.

The lower frame elements and the vertical side support elements may be disjointly continuous and constructed of a single component configured to provide a lower frame element and a vertical side support element, incorporating a bend to counter the forces applied on the vertical side supports, or the lower frame elements and the side support elements may be constructed of more than one components in which case the components are welded, screwed or pinned together to provide vertical side supports and lower frame elements.

Preferably, the lower frame elements and the vertical side support elements are constructed of more than one components, in which case the joints may incorporate bends to counter the forces applied on the side supports.

The lower frame elements are arranged in an extendable telescopic arrangement comprising a sleeve member having a securing means which houses the two lower frame elements, the lower frame elements slide in and out within the sleeve member or a laterally extending arrangement may also be constructed by superimposing the two lower frame elements. The securing means for the telescopic arrangement is such which restricts free movement of the lower frame elements in the sleeve member.

Preferably, excessive gaps between barrier elements may be relieved by gap filling brackets

The frame assembly is provided with at least one upper and one lower independently adjustable securing means. The lower securing means may be positioned on the lower ends of the vertical side support extending laterally or on the lower frame elements or an additional element mounted closed to the

lower barrier frame. The upper securing means may be positioned on the side of the vertical side support elements or on the upper lateral portions of the vertical side support elements.

Preferably, barrier securing means comprises a threaded bar having a hand turning knob and a rubber or plastic face mounted distally on the threaded bar to press against the opposing supports of passageways.

The barrier frame is provided with a laterally extendable gate comprising a plurality rectangular frames with vertical bars, screens or slabs. The gate extension mechanism comprises either a telescopic arrangement of sliding gate frame elements or superimposition of two rectangular gate frames.

The gate closing mechanism may be such that when the gate is closed it exerts outward compressive pressure in which case the gate closing mechanism may be mounted either on the gate frame or on the outer barrier frame or the gate closing mechanism may be nonpressure exerting means.

Preferably, the barrier frame is provided with feet whereby giving ground clearance to the barrier securing means.

Preferably, the barrier is constructed from light and resilient hollow pipings, and advantageously, the piping is four-sided with two pairs of opposing faces, one pair being narrower than the other pair, and the plane of the wider faces lie right angle to the bending plane.

Preferably, the two lower frame elements and sleeve elements are constructed from hollow pipings of four sides with two pairs of opposing faces, one pair being narrower than the other pair, and the plane of the wide face lie right angle to the bending plane.

BRIEF DESCRIPTION OF THE DRAWINGS:

Embodiments of the present invention will now be described by way of examples and with reference to accompanying drawings, in which:

Fig. 1 shows two barrier frame components each of which having a vertical side support element and a lower barrier frame element.

Fig 2 shows two barrier frame components of fig. 1 superimposed to form a barrier frame. The barrier frame has barrier securing means at all four corners.

Fig 3 shows a barrier of fig. 2 having an openable gate mounted within the barrier frame. The gate has two superimposing sections.

Fig 4 shows two rectangular sections of the gate shown in fig. 3

Fig 5 shows two rectangular sections of the gate, as shown in fig.4, superimposed to form a laterally extending gate. The gate has a locking mechanism.

Fig 6 shows a mounting plug, used for mounting the two rectangular sections of the gate shown in fig. 5 in a laterally extending manner.

Fig 7 shows an independently adjustable barrier securing means

Fig.8 shows a metallic section used for the construction of a barrier frame

Fig.9 shows a barrier extension member

Fig.10 shows a second embodiment of the barrier frame (without gap filling brackets), the barrier lateral extension mechanism comprises of a telescopic arrangement of lower frame elements in a sleeve member.

Fig. 11 shows an alternative embodiment of the barrier frame showns in fig. 10

Fig. 12 shows an enlarged view of a telescopic arrangement for the barrier frame of figs. 10 and 11.

Fig. 13 shows an alternative embodiment of the barrier frame.

Fig. 14 shows an alternative embodiment of the barrier frame shown in fig. 13.

Referring back to the drawings the fig. 1 shows two sections of the barrier frame each of which having a lower frame element 2, 2' and a vertical side support element 1, 1'. The lower frame elements 2, 2' have a plurality of unobstructed cylindrical bores 3 along its length and the vertical side support elements 1, 1' are welded on at one end of the lower frame elements. The upper and lower ends of the vertical side support elements 1, 1' extend laterally and outward. Side brackets 7, 7' are mounted adjacent to the vertical side support elements. One of the two vertical side support elements has a latch 6 for gate locking mechanism.

Fig. 2 shows the two sections of the barrier frame mounted superimposingly and held together by removable pins 4, 4'. The pins 4, 4' pass through the cylindrical bores 3 on the lower frame elements. Four independently adjustable fastening means 5 are mounted on the lateral extensions of the vertical side support elements. The corner features in the barrier frame are eliminated by mounting plastic or other soft blocks 37 at the curvature. A laterally extendable gate is mounted within the barrier frame, shown in fig. 3., using two hinges 11, 11'. The gate has two rectangular sections 8 and 9 having a plurality of vertical bars 14. The gate section 8 has long slots 12 along the

horizontal arms and the gate section 9 has a plurality of cylindrical unobstructed bores 13 along the horizontal arms.

The two sections are mounted together using the mounting plug 10 as shown in fig. 6 . The plug 10 consists of a long threaded arm 24, a short body 23, and a knob 25. The body 23 contains two rubber or soft resilient rings 22 and two studs 21. For mounting the two sections of the gate 8, 9, the plug mount 10 is positioned in the slot 12 of the gate section 8. The gate section 9 is positioned on the plug mount 10 such that the long arms and the studs pass through the bores 13 on the gate section 8. The knob 25 is positioned on the long arm 24 and the two sections of the gate are fastened. The gate can be laterally extended by loosening the knob 25 and repositioning the mounting plug 10 along the slot 12 of the gate section 8.

Fig. 5 shows a gate locking mechanism 15, mounted on one of the gate section. The gate locking mechanism 15 consists of a long bar 18 having two upward hooks 19, a thumb press head 16, and a coil spring 17. The gate locking mechanism is mounted on the gate section 10, leveling hooks 19 with the latches 6 on the vertical side element 1', using the mounts 20. For locking the gate the thumb press head 16 is depressed, allowing the hooks 19 to engage in the latches 6 on the barrier side element 1'. When the thumb press head 16 is released the hooks 19 engage in the latches 6, locking the gate in position. Similarly for opening the gate the thumb release press 16 is depressed releasing the hooks from the latches 6.

Independently adjustable barrier securing means 5, shown in fig. 7, consists of a threaded bar 28 having a distally mounted rubber face 26, a

turning knob 27, and a positioning mount 29. Fig. 3 shows four barrier securing means mounted at the four corners of the barrier.

To use the barrier, it is positioned between the opposing supports of doorways and similar thresholds. The barrier is secured in position using the barrier securing means 5. The gate is opened and closed by using the thumb release head 16.

For extending the barrier, the fastening pins 4, 4' are removed, the separation between the two vertical side support elements 1, 1' is adjusted, and the fastening pins 4, 4' are replaced.

The barrier extension member, fig. 9, may be used to extend the barrier frame beyond the limit of separation of the lower frame elements. For use of the extension member the barrier securing means are removed, the extension member is positioned in place of the barrier securing means, and the securing means are repositioned on the extension member.

Figs. 10 - 14 describes alternative embodiments of the invention. In fig. 10 and 11 the lower barrier frame elements 2, 2' are arranged telescopically in a sleeve member 32 having a plurality of unobstructed cylindrical bores 33. The lower barrier frame elements have unobstructed bores 34. The lower barrier frame elements 2, 2' are positioned in the sleeve member 32 and secured by inserting the pins 4, 4'. The barrier is provided with feet 36, 36' whereby giving ground clearance to the barrier securing means.

Fig. 11 shows an alternative embodiment of the barrier shown in fig.10, in this case the barrier securing means may be mounted on the sides of the vertical side supports (not shown in the drawing).

Figs. 13 and 14 show embodiments where a single element is used to construct lower barrier frame elements 2, 2' and vertical side support elements 1, 1'. Addition elements 35, 35' are mounted on the lower barrier frame elements for positioning barrier securing means.

The barrier is constructed of light and hollow sections of resilient material shown in fig 8. The section is four-sided with two pairs of opposing faces, one pair being narrower than the other pair, and plane of the wider face lie right angle to the bending plane. The barriers in figs. 1 - 4, 10, 11, and 12- 14 the bends are formed by bending the section at the narrower sides of the four sided sections.

CLAIMS:

1. A laterally extending safety barrier for positioning between vertically oriented laterally separated opposing supports of doorways and similar threshold, comprising:

a first lower frame element having a vertical side support element and

a second lower frame element having a vertical side support element;

a laterally extending barrier arrangement of said first lower frame element and said second lower frame element;

a laterally extending gate hingedly mounted on said vertical side support element; and

an independently adjustable barrier securing means.

2. A barrier according to Claim 1 wherein said lower frame element and said vertical side support element are jointedly continuous.

3. A barrier according to the proceeding claims wherein said vertical side support elements have upper and lower ends,

said upper end and/or said lower end of at least one said vertical side support element extends laterally.

4. A barrier according to any of the proceeding claims wherein said lateral extension serves as housing for barrier securing means.

5. A barrier according to Claim 1 wherein said vertical support element and said lower frame element are unjointedly continuous.

6. A barrier according to Claim 5 wherein said vertical side support has upper end extending laterally.

7. A barrier according to Claim 6 or Claim 5 wherein said upper end extending laterally serves as housing for barrier securing means.

8. A barrier according to any of the proceeding claims wherein said barrier securing means is mounted on said lower frame element

9. A barrier according to any of the proceeding claims wherein said barrier securing means is mounted on said lower lateral extension of said vertical side support element.

10. A barrier according to any of the proceeding claims wherein said barrier securing means is mounted on said upper lateral extension of said vertical side support.

11. A barrier according to any of the proceeding claims wherein said laterally extending gate has superimposing rectangular gate sections.

12. A barrier according to any of the proceeding claims wherein said laterally extending barrier arrangement has superimposing said lower frame elements.

13. A barrier according to any of the proceeding claims wherein said laterally extending barrier arrangement has telescopic arrangement of said lower frame elements

14. A barrier according to Claim 13 wherein said telescopic arrangement of said lower frame elements consists of a sleeve member housing said first and said second lower frame elements.

15. A barrier according to any of the proceeding claims wherein said barrier is constructed of hollow sections of resilient material,

said section having four sides with two pairs of opposing faces, one pair being narrower than the other pair, and the plane of the wider face lie right angle to the direction of pressure applied on the barrier securing means.

16. A barrier according to any of the proceeding claims wherein said lower frame elements are constructed of hollow sections of resilient material, said section having four sides with two pairs of opposing faces, one pair being narrower than the other pair, and the plane of the wide face lie right angle to the direction of pressure applied on the barrier securing means.

17. A laterally extending barrier for positioning between opposing supports of doorways and similar thresholds, comprising:

a first lower frame element having disjointedly continuous vertical side support element;

a second lower frame element having disjointedly continuous vertical side support element;

a laterally extending barrier arrangement of said first and second lower frame elements;

a laterally extending gate having superimposing gate sections; and

a barrier securing means for positioning said barrier between said opposing supports.

18. A barrier according to Claim 17 wherein said vertical side support has upper end extending laterally.

19. A barrier according to Claim 18 or Claim 17 wherein said lateral extension houses said barrier securing means.

20. A laterally extending barrier for positioning between vertically oriented laterally separated opposing supports, comprising:

a first vertical side support element having a first lower frame element,

a second vertical side support element having a second lower frame element,

said first vertical side support and/ or said second vertical side support

element has upper end and/or lower end extending laterally;
a laterally extending barrier arrangement of said first and second lower
frame elements;
a laterally extending gate hingedly mounted on said vertical side support
element,
said laterally extending gate having a plurality of rectangular gate
sections detachably superimposed; and
an independently adjustable barrier securing means for securing said barrier
between said opposing supports.

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